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PACKAGING

THE CAHNERS MAGAZINE FOR DECISION-MAKERS/MAY 1988

Neck Bands Protect & Sell

Machinery Users Brace For Change

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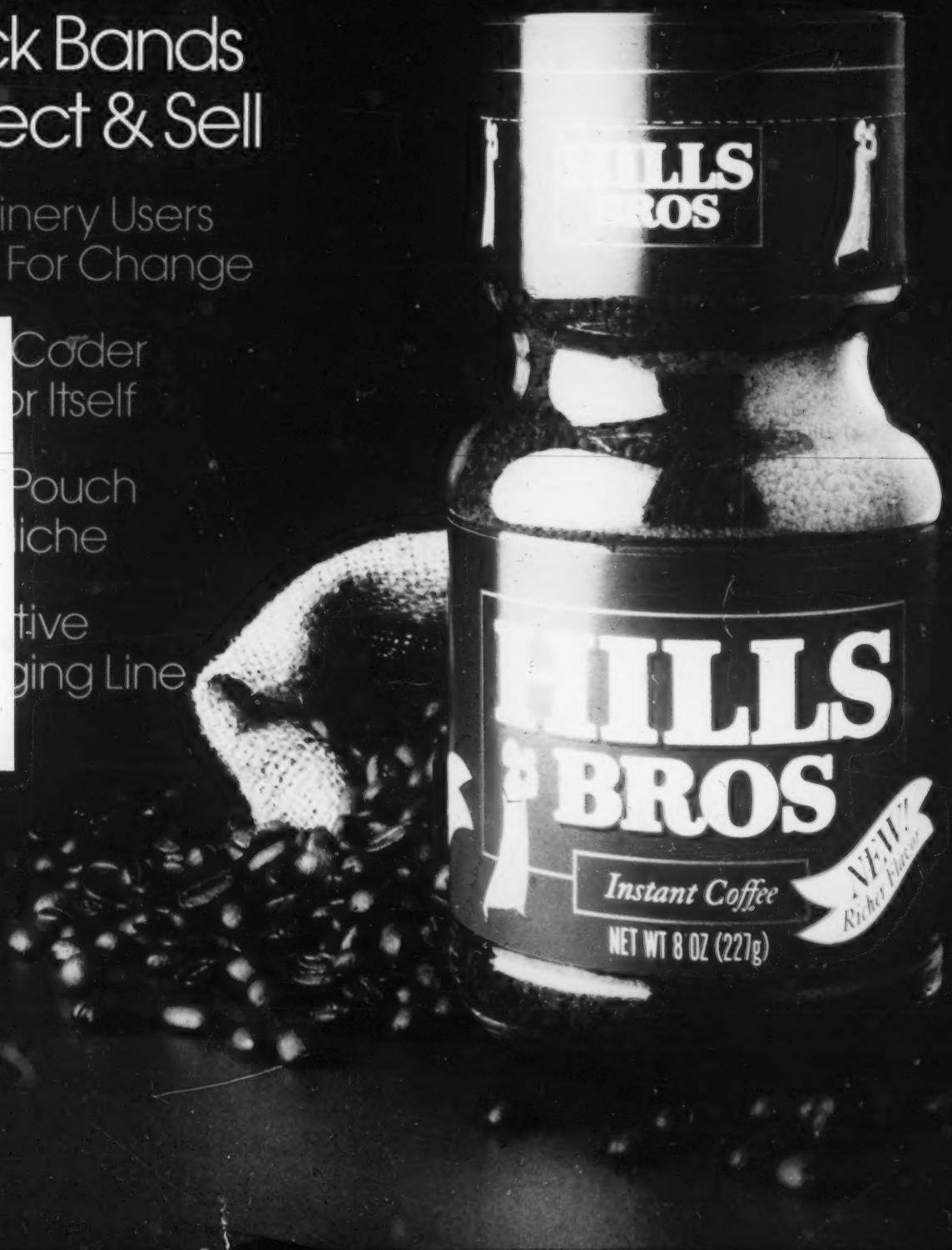

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Plastics Recycler Begs For Scrap

He pays well for HDPE but can't get enough

Dairymen interviewed for the milk pouch story in this issue told PACKAGING that trash-disposal advantages of the pouch could result in decreased use of the HDPE milk bottle.

That would not be good news to Kyle Wright. He wants dairies and other packagers of such products as motor oil and dishwashing soap to keep using HDPE bottles. The company for which Wright is sales director, Eaglebrook Plastics of Chicago, grinds them up either before or after they reach the consumer . . . and makes a good profit selling the regrind.

He said Eaglebrook has contracts with many blow-molders who are committed to recycling all or nearly all of their discarded HDPE. Eaglebrook buys its HDPE lumps, chunks, purgings, floor sweeps, and bad bottles for 13 to 15 cents a pound.

From bottles to 'wood' is where scrap HDPE goes at Eaglebrook Plastics. Andrew Stephens (left), company president, and Kyle Wright, sales director, here discuss the quality of regrind.

"If your business is plastics packaging and your resin costs are 50 cents a pound," Wright said, "you go out of your way to recover that material."

For some companies, Eaglebrook cleans paper-labeled HDPE bottle regrind which those companies use to make new bottles. Other companies purchase cleaned regrind from Eaglebrook for use in multilayer non-food bottle applications.

In addition, Eaglebrook has formed a new company to manufacture and market plastic lumber made from 100 per cent post-consumer dairy bottles. Applications include park benches, fences, and decking.

Wright estimates that a medium-size dairy can generate 15,000-20,000 pounds of plant scrap each month. That includes lumps and chunks plus defective bottles. "We offer to pick it up for them, grind it up for them, even drop off a trailer so they don't have to use their own warehouse to store it," he said. "But many dairies are still putting their scrap in the dumpster."

Yet he's optimistic, since landfill tipping fees are going up. "If I pay 15 cents a pound for scrap and it costs them $40 a ton to dump it, they might throw it away. But when it costs $100 a ton to dump it, you have a stronger motivation to profitably dispose of it."

Aluminum Supplier Touts Anniversary

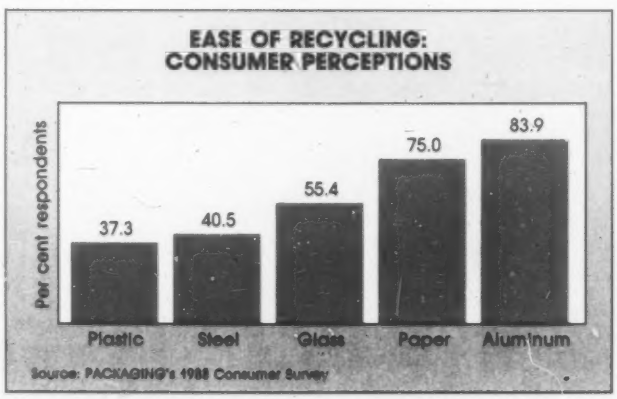
Can program hits 20-year mark

Reynolds Metals Co., Richmond, Va., this spring is celebrating the 20th anniversary of the launching of the nation's first consumer-oriented recycling business.

In 1968, when Reynolds Metals Co. initiated cash-for-cans recycling, only three soft drinks and five brands of beer were being packaged in aluminum cans. Today aluminum cans enjoy a 95 per cent share, and consumer recycling of aluminum beverage cans has grown into a multimillion-dollar industry.

In the first year of the recycling program, a company spokesperson said, Reynolds recycled one million pounds of aluminum. Today the company exceeds that amount every day.

Reynolds estimates that recycling has reclaimed more than 10 billion pounds of aluminum since '68. ■



Consumers Rank Recycling Ease

Not all packaging is equal, they say

In its 1988 Consumer Survey, PACKAGING magazine asked 1,000 consumers nationwide a number of questions about packaging as it related to recycling.

More than 750 consumers responded to the question "How easy is it to recycle the following packaging materials?"

As shown on the accompanying graph, aluminum led the field with the most "Easy" answers and fewest "Difficult" replies. Paper came in second, glass third, and steel fourth. Plastics by far received the fewest number of "Easy" replies—only 37.3 per cent.

A full report on PACKAGING's 1988 Consumer Survey will be published in our June issue.

Recycling To Become A Major Industry

Incineration also seen growing steadily

Business Communications Co. (BCC), Norwalk, Conn., has published a report on trends in the disposal of plastics packaging waste through the year 2002. The report predicts that landfilling will remain flat while recycling and incineration grow.

According to the report, 96 per cent of plastics-packaging scrap went to landfills in 1987, about 3 per cent was incinerated, and 1 per cent was recycled. By the year 2000, only 37 per cent will be landfilled, 18 per cent will be incinerated, and 42 per cent will be recycled.

Today, said the group, only 150 million pounds of post-consumer plastic packaging scrap is recycled out of a total 14 billion pounds consumed. BCC forecasts that by 1992, roughly 5.5 billion pounds of it will have to be separated for recycling.

MACHINERY USERS BRACE FOR CHANGES

Our latest survey reflects concerns about gearing up packaging lines to match likely demands for flexibility

By R. Bruce Holmgren
Editorial Director

All across industry, we now find companies taking a new attitude toward the phenomenon of manufacturing. Today's emphasis is clearly on flexibility. Packaging, as an integral part of manufacturing in food, pharmaceuticals and a wide array of other industries, is one of the centers of the action stemming from the shift in attitude.

Therefore, it comes as no surprise to note the relation-

THE BACKGROUND: MACHINERY IN USE TODAY	Meats	Poultry; Eggs	Butter; Cheese	Ice Cream; Frozen Desserts	Fluid Milk	Canned Foods	Dehydrated Foods	Sauces; Dressings	Frozen Foods	Milling	Cereal Breakfast Foods
Bagging, Preform Bags	750	257	-0-	66	-0-	373	26	219	407	474	-0-
Bar Coding/Scanning	878	1075	265	-0-	226	287	-0-	16	315	80	63
Blowmolding	-0-	-0-	3	43	789	-0-	-0-	-0-	-0-	-0-	15
Bottle Cleaners	-0-	-0-	104	-0-	-0-	958	-0-	594	-0-	47	-0-
Bottle Unscrambling	-0-	-0-	20	-0-	-0-	655	-0-	244	-0-	3	-0-
Bundle Wrap/Banding	1062	374	364	152	518	795	149	277	829	208	-0-
Capping	-0-	-0-	115	22	789	1062	8	581	-0-	44	22
Cartoning	348	167	431	131	980	303	39	140	303	449	381
Case Closing/Sealing	1537	745	933	121	1008	2561	91	638	2494	246	785
Case Forming	2159	416	383	22	653	759	-0-	288	700	151	437
Case Packers	878	-0-	597	43	1353	2292	69	742	2224	168	803
Checkweighers	4594	1063	1129	88	827	1177	582	343	1245	862	1088
Coding & Marking	4301	2840	1625	241	1932	2395	121	827	2429	635	877
Conveyors	13,633	6810	4266	1271	5415	9811	574	2729	9879	3459	571
Fillers, Dry	-0-	-0-	383	-0-	226	502	119	484	535	1077	459
Fillers, Liquid	-0-	301	594	329	3514	2588	-0-	761	2622	69	22
Form-Fill-Seal, Horiz.	1921	-0-	524	66	526	278	457	296	312	198	814
Form-Fill-Seal, Vert.	-0-	-0-	336	22	377	402	257	257	547	66	237
Gluing/Hot Melt	2946	849	1213	247	1683	2771	517	1155	2635	471	1791
Jet Printers	1427	-0-	667	66	980	1180	118	599	1146	173	155
Label Imprinting	915	641	-0-	22	226	185	8	16	-0-	29	-0-
Labeling	4758	1242	921	66	937	2656	68	832	2689	117	96
Line Dividers/Conveyors	988	290	470	110	677	1987	84	140	2021	75	78
Metal Detectors	5288	972	431	110	379	637	68	249	603	253	959
Neck Band/Body Sleeve	-0-	-0-	22	-0-	-0-	81	-0-	120	-0-	-0-	-0-
Net Weigher	1226	137	271	22	-0-	616	43	79	650	184	33
Overwrapping	439	969	194	22	-0-	81	-0-	140	115	-0-	-0-
Palletizing	146	-0-	635	66	226	2160	-0-	189	2092	395	181
Shipping Tray Form/Close	531	-0-	-0-	43	-0-	402	-0-	31	435	-0-	22
Shrink Wrapping	769	802	98	110	377	587	56	281	519	78	93
Stapling	713	361	177	22	-0-	352	-0-	80	-0-	-0-	-0-
Strapping	1190	541	286	-0-	226	291	-0-	147	325	-0-	22
Stretch Wrapping	1811	862	361	131	526	965	49	172	999	338	219
Taping	5637	1046	1513	199	1008	975	146	330	1127	367	91
Timing Screws	-0-	-0-	134	-0-	157	2377	-0-	717	2411	572	-0-
UPC Scanning	348	-0-	121	-0-	-0-	106	-0-	-0-	-0-	31	100
Uncasers	-0-	-0-	-0-	-0-	-0-	452	-0-	79	-0-	-0-	37

Packaging engineers face a variety of challenges for the future and have voiced overriding concerns about adapting lines to many different packages.

ship between today's focus on flexibility and the main points of PACKAGING's latest survey of its readers concerning their wants and intentions relating to machinery. More to the point, taken together, the forward thinking of typical major users of packaging machinery and the bare bones findings of the survey provide us a picture of the situation today and an explanation of what this picture means for tomorrow.

Readers responding to our survey ranked 21 requirements in terms of their im-

Pet Food	Bread; Cake	Cookies; Crackers	Cane and Beet Sugar	Confectionery	Malt Beverages	Wines; Liquor	Soft Drinks	Extracts; Syrups	Fish	Roasted Coffee	Food N.E.C.	TOTAL
1234	2447	222	226	354	-0-	-0-	284	14	-0-	104	361	7818
208	149	112	25	341	29	71	-0-	14	-0-	105	211	4470
-0-	-0-	-0-	-0-	-0-	-0-	-0-	100	26	-0-	-0-	-0-	976
-0-	-0-	-0-	-0-	157	231	960	913	53	-0-	105	392	4514
140	-0-	-0-	-0-	157	-0-	524	-0-	40	-0-	111	308	2202
594	232	292	107	262	58	-0-	849	78	-0-	11	612	7924
210	-0-	-0-	-0-	211	187	1123	2027	145	-0-	180	671	7397
145	1187	294	16	612	84	74	100	131	456	-0-	833	7604
481	1162	473	253	1389	310	685	813	171	1345	188	1265	19,694
326	442	346	114	358	232	36	1014	92	-0-	-0-	325	9253
488	736	215	136	701	696	717	3047	131	-0-	-0-	499	16,535
602	2291	1017	316	1765	216	103	585	328	1778	203	1916	24,118
1387	2783	910	316	2758	380	387	2099	249	1778	340	3751	35,361
6482	16,538	1495	4425	5009	2481	2271	32,607	1651	4445	900	7676	144,398
616	-0-	-0-	464	493	-0-	-0-	-0-	92	-0-	190	1857	7497
419	-0-	-0-	-0-	211	466	1203	3969	276	-0-	-0-	922	18,266
70	315	778	16	1231	-0-	-0-	-0-	302	456	-0-	920	9480
210	525	561	228	1691	-0-	-0-	-0-	852	-0-	195	1775	8538
665	2539	1044	325	2067	911	1142	2814	450	1819	188	3497	33,739
280	1442	245	60	311	452	475	2899	249	456	129	657	14,166
-0-	872	42	40	157	38	29	-0-	26	-0-	105	837	4188
581	2315	346	66	1075	916	1074	1442	341	889	119	1927	25,473
210	1648	233	79	813	718	268	1354	118	-0-	360	484	13,206
154	3443	1014	191	2418	-0-	-0-	-0-	26	1778	195	833	20,001
-0-	-0-	-0-	-0-	-0-	-0-	192	-0-	14	-0-	104	85	618
70	0-	-0-	120	479	-0-	-0-	-0-	26	1345	275	474	6050
111	1975	453	24	655	52	-0-	-0-	-0-	-0-	-0-	333	5563
518	405	252	221	351	770	485	4181	197	433	111	402	14,416
-0-	256	-0-	-0-	146	98	-0-	777	14	-0-	-0-	272	3027
364	620	152	45	723	17	20	393	40	-0-	-0-	539	6683
-0-	-0-	-0-	-0-	-0-	-0-	96	-0-	92	-0-	-0-	366	2259
-0-	108	-0-	-0-	136	-0-	129	401	40	-0-	-0-	366	4208
742	706	231	195	557	111	143	785	157	497	112	703	11,372
945	1622	805	128	1787	37	227	320	157	564	115	1996	21,142
-0-	-0-	-0-	-0-	201	591	2585	2178	66	-0-	465	1199	13,653
-0-	260	145	-0-	111	-0-	97	-0-	-0-	456	104	91	1970
-0-	-0-	-0-	-0-	-0-	360	440	2198	52	-0-	96	85	3799

Source: Cahners Research, 1987 Packaging Machinery Study

With high tech or without it, tomorrow's lines must be flexible

portance. Heading the list are simplicity of changeover, ability to handle a wide range of materials or containers, and an ability to clean without disassembly.

They ranked maximum speed, a factor which we often hear is so important if not dominant, only in fourth place—and just about extra guarding for safety, followed by price. After that, a whole succession of factors, with diagnostics well down on the list; reveal our readers' priorities.

At the very bottom of the list came automatic, computer-guided changeovers, and single-purpose machines. (Obviously, these rankings are an oversimplification, as readers interpret "importance" in many subjective gradations, but the general conclusions deserve attention, since they reflect the changes transpiring in industry and in packaging.)

Face many uncertainties

Looking beyond the mere assertion that flexible manufacturing—and packaging—is now the order of the day, we find that what our readers face is widespread uncertainty about tomorrow. In the context of packaging, this uncertainty dictates a sensing for, almost a preoccupation with, being able to handle more or different packages—and with capacities and volumes shrouded in corresponding uncertainty.

Reducing all these generalities and abstractions to the concrete realities of what is now taking place, we find confirmation of all this in the views presented—quite coincidentally—by a number of managers and professionals at the recent University of Wisconsin program on planning, laying out and equipping a packaging line.

As a starter, J. Morris Binder, vice president for science and technology, Tone Brothers, Des Moines, stressed the importance of forecasts of likely volumes and sales—and cycles—of products as a basis for developing or upgrading the packaging lines to run them on. His point was that flexibility not only of products but also of entire operations will be the rule rather than the exception from now on.

Translating forecasts into packaging-line capacity or output requirements, Binder told of the need to reach close decisions (such as one line vs. two, or lower capacity) to be ready to go either way, in event of demand changes.

J. Edward Morrah, director, division engineering, Vicks Manufacturing, Richardson-Vicks Inc., Greensboro, N.C., and Charles Mayer, vice president of operations, Sather Inc., Round Lake, Minn., also noted the pressing need for flexibility. "Flexibility becomes the strategy—we're all going to made-to-order manufacturing," Morrah predicted. "The big thing is to make your lines as flexible as you can," Mayer added.

Adapt to flexibility

Bracing for all these upcoming changes, the respondents to our survey reveal their concern about meeting the uncertainties inherent in such changes when they rank a number of other factors that guide their machine choices. An open construction for ease of access, an ability to do clean-up and changeover without tools, and even such features as self-cleaning were high on the list.

These latter factors reflect the concern users have about the fitting of a new machine into an existing line or as part of the upgrading of a line. The ranking of these factors not only reveals a desire for immediate efficiency with minimum losses of time but also calls attention to some of the frequently neglected factors in machinery selection. One leading example of such factors is that of maintenance.

At the Wisconsin program, Steve McCormick, manager of maintenance, Miller Brewing Co., Milwaukee, hit hard on that very point—the importance of keeping in mind the likely need for maintenance when selecting this or that machine. Noting the trend toward reduced operator involvement and more monitoring of a machine, McCormick urged his audience to plan for maintenance on a plantwide basis.

While the comments about maintenance match the concerns of machine buyers, it is worth remembering that a firm such as Miller Brewing uses the top speeds and high volumes of a particular industry. Therefore, when McCormick noted the general trend to electronic and computer-based control, monitoring of entire lines, as well as higher speeds as well as equipment changeover that contribute to greater package flexibility, we need to keep in mind that many companies do not apply that refined a level of the so-called high tech of packaging.

How much high tech?

In other words, while it goes without saying that the larger firms, such as those in the Fortune 500, seek the high level of technology and have the resources to pay for it, the large numbers of smaller companies—and the smaller plants of the big firms, too—often limit their use of high tech.

Another aspect of our survey is the ranking of machin-

Factors which survey respondents rate 'extremely important' in machinery selection

Per Cent	Factor
41	Simplicity of changeover
29	Ability to handle wide range of materials/containers
28	Ability to clean without disassembly
25	Maximum speed
23	Extra guarding for safety
20	Price
18	Open construction for accessibility
17	Built-in programmable controllers
17	Clean-up, changeover without tools
17	Self-cleaning
14	Memory capability to control 11 settings
13	Special or unusual space limitation
13	Easy-to-read diagnostics
13	Diagnostics in flow chart
12	Diagnostics with panel lights
10	Vision systems
10	Multi-purpose or monobloc machines
7	Automatic adjustment by computer
6	Accumulating conveyors between machines
6	Automatic, computer-guided changeovers
3	Single-purpose machines

ery which users plan to buy during the coming year. The top five in popularity—all above 20 per cent—are conveyors (a whopping 48 per cent of the survey respondents plan to buy them), checkweighers, liquid fillers, labelers and jet printers.

As to conveyors, we can conclude that much revision of existing lines or the equipping of new lines (perhaps with a rearranging of equipment already in the plant) is a major coming activity.

With checkweighers, liquid fillers, and labelers, the most casual tour of any of the recent major packaging shows reminds us that the various manufacturers offer considerable upgrading and updating over previous models.

Extend today's capacity

Interestingly enough, the projected plans by users to buy such equipment in the near future represents a clear extension of the findings of a major study by Cahners Publishing Co.—research which tallies up the across-the-board total of packaging machinery usage.

For instance, to take only three examples, as to the most popular planned purchase, that of conveyors, we note that USA plants packaging food and kindred products now use 144,398 conveyors, of which 8,846 were purchased in the last 12 months, for use on 42,313 packaging lines, of which 2,480 represent new packaging lines.

For the same industries and plants, the Cahners research shows 24,118 checkweighers in use, with 2,173 purchased in the last 12 months for use on the same 42,313 packaging lines. Likewise, for liquid fillers, some 18,266 are in use, with 1,670 purchased in the last 12 months, for these 42,313 lines.

Tending to project the same findings about existing equipment is another finding from our survey, noted earlier. It is that over 80 per cent of the respondents plan to spend the same or more in 1988 as in 1987. Further, 35 per cent plan to make major expenditures—from upward of $100,000 to $1 million or more.

Basic machines, or even basic lines aside, what about the use of high tech—such as information systems, robotics or the like? Principal users of management information systems for machines and entire lines, understandably, are the larger installations of the larger companies. Further, survey findings show that many firms not now using such systems plan to do so in the future.

> Machines you pick today must meet tomorrow's mandate for made-to-order manufacturing

Robotics pro and con

Robotics? Our survey results ran all over the lot and while only a majority of the respondents now use robotics, others plan to do so. What about those not using or not even expecting to have robotics? Our findings show some interesting responses to the question of "why not" use robotics.

Some said their companies or operations are too small, while others simply dismissed robotics as not applicable. Yet many positive notes turned up, such as in responses saying, ". . . waiting for the right application" and so on. Our question also generated some responses with feelings: "Too far out . . . too slow, too complicated, just a toy . . . too high tech . . ." and so on.

Our survey aside, a perspective on robotics worth sharing in this context came from Charles Craven, consulting engineer, S.C. Johnson & Son, Racine, Wis., during the University of Wisconsin program. "While robotics cannot do all packaging operations, in many operations they offer significant improvement and a degree of flexibility not available with standard systems," he noted.

He sees robotics as only one element in an entire system or family of flexible automation, which he described as using high-level process control, automatic set-up, servo-controlled features, self-diagnostics, real time communications, and remote communications. He suggested flexible automation as appropriate for an entire range of class, even a family of products, as distinguished from the one or two products which usually represent the focus of hard automation and its inherent difficulties of modification.

In this sense, Craven echoes the views and concerns of many seasoned managers and professionals, pointing up the need to prepare for the rising use of flexible manufacturing —with packaging and its machinery inextricably enmeshed in the coming changes, as the respondents to our surveys have seemed to sense. ■

R. BRUCE HOLMGREN
Editorial Director

"The widely-heralded shift to flexibility in manufacturing is now here—with individual packaging machines as well as entire packaging lines geared up to speedy shifts from container to container, product to product, with minimum loss of time between these run changes."

PLEASE RATE THIS ARTICLE

How would you rate this article? To reply, circle the appropriate number on the reader service card:

Outstanding	436
Above Average	437
Average	438
Below Average	439

What survey respondents report they 'plan to buy' in the next 12 months

Per cent	Category of Equipment
48	Conveyors
25	Checkweighers
25	Liquid fillers
24	Labelers
21	Jet printers
20	Tapers
20	Stretch wrappers
18	Case closers, sealers
16	Hot-melt gluers
16	Line dividers/conveyors
14	Bundle wrappers, banders
13	Cappers
13	In-line coders, markers
12	Metal detectors
12	Case formers
11	Bar coders, scanners
10	Label imprinters
9	Palletizers, depalletizers
8	Baggers (using preformed bags)
8	Strappers
7	Overwrappers
7	Bottle unscramblers
7	Dry fillers
7	UPC scanners
6	Vertical form-fill-seal units
6	Shrink wrappers
6	Timing screws
5	Machine vision systems
5	Cartoners
5	Neck banders, sleevers
5	Blow molders
4	Bottle cleaners
4	Horizontal form-fill-seal units
4	Net weighers
4	Aseptic packers
4	Shipping, tray formers/closers
4	Staplers
3	Skin, blister machinery
3	Thermoform-fill-seal units
3	Vibration, shock test equipment
1	Uncasers
1	Tube fillers